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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/369,803 08/06/99 TONKIN

M AD-6643

EXAMINER

IM52/0426

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ART UNIT

PAPER NUMBER

6

1724

DATE MAILED:

04/26/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/369,803

Applicant(s)

TONKIN ET AL.

Examiner

Scott Bushey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 15-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 5, 7-10, and 12-14 is/are rejected.
- 7) ☒ Claim(s) 3, 6, and 11 is/are objected to.
- 8) ☐ Claims ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 shs.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-14, drawn to a humidification device, classified in class 261, subclass 101.

- II. Claims 15-21, drawn to a fuel cell, classified in class 429, subclass 12.

The inventions are distinct, each from the other because:

2. Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different functions and different modes of operation.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation between Examiner Jonathan Crepeau and Mr. William H. Hamby on January 23, 2001 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-14. Affirmation of this election must be made by applicant in replying to this Office action. Claims 15-21 are hereby withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the

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application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1, 4, and 9 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 1, 4, and 9 are single means claims and are therefore subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. *In re Hyatt*, 708 F.2d 712, 218 USPQ 195 (Fed. Cir. 1983).

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 2, 4, and 5 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Kimura (Abstract; Figs. 1, 2, and 4; col. 3, lines 5-15, 39-53).

10. Claims 1, 2, 4, 5, 9, and 10 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Brown (Abstract; Figs. 1-5).

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Applicant should note that the permeable, porous body (23) of the reference is considered to anticipate applicant's hydrophilic membrane surface, as broadly recited by the instant claims.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 4, 5, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown taken together with Kimura.

As stated in paragraph 10 above, the permeable, porous body (23) of Brown is considered to anticipate applicant's hydrophilic membrane surface, as broadly recited by the instant claims. However, even if applicant cannot agree that the porous body (23) of Brown anticipates applicant's claimed hydrophilic membrane, Kimura clearly teaches that it was well known at the time of the invention, to utilize a hydrophilic membrane as means for humidifying an intake gas being fed to hydrocarbon fuel combustion engine. Therefore, it would have been obvious for an

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artisan at the time of the invention, to substitute the hydrophilic membrane of Kimura for the permeable, porous body of Brown, since such would reduce the weight of the device, as is desirable within an automobile to improve fuel economy.

14. Claims 7, 8, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the reference combination as applied to claims 4, 5, 9, and 10 in paragraph 13 above, and further in view of Robinson.

The reference combination as applied to claims 4, 5, 9, and 10 in paragraph 13 above, substantially discloses applicant's invention as recited by instant claims 7, 8, 12, and 13, except for the heat from the engine exhaust being used to preheat the water prior to contact with the incoming intake air, the flow of the exhaust gases being controlled by a temperature sensing element.

Robinson (Fig. 1; col. 3, lines 13-21) teaches the well known use of the heat from engine exhaust gases to preheat water (23) within a reservoir prior to contact of the water vapor with intake air to humidify the intake air prior to its passage to a carburetor (16), the flow of the exhaust gases through the heat exchange coil (44) within the water reservoir being controlled by a temperature sensor (47) that controls valve (46) in the exhaust line. It would have been obvious for an artisan at the time of the invention, to provide the intake air humidifying device as taught by the reference combination as applied to claims 4, 5, 9, and 10 in paragraph 13 above, with water preheating means that uses heat from the engine exhaust, since such would efficiently provide a saturated air intake stream using available waste heat, while also cooling the engine exhaust prior to its release to the atmosphere, thereby reducing thermal pollution.

15. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over reference combination as applied to claims 7, 8, 12, and 13 in paragraph 14 above, and further in view of either Pitts et al or Mohr et al.

The reference combination as applied to claims 7, 8, 12, and 13 in paragraph 14 above, substantially discloses applicant's invention as recited by instant claim 14, except for the fuel tank of the vehicle having a hydrophilic membrane associated therewith, across which water vapor pervaporates.

Pitts et al (Abstract; Fig. 1) and Mohr et al (col. 2, lines 46-51) each alternatively teach that it is well known to provide a fuel tank with a hydrophilic membrane, across which water vapor pervaporates. Wherein water accumulation within a fuel tank of a motor vehicle is a common and well known problem, it would have been obvious for an artisan at the time of the invention, to provide the fuel tank of the motor vehicle as taught by the reference combination as applied to claims 7, 8, 12, and 13 in paragraph 14 above, with a hydrophilic membrane, in view of either Pitts et al or Mohr et al, since such would eliminate fuel line freeze up during cold weather operation.

Allowable Subject Matter

16. Claims 3, 6, and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


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18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Bushey whose telephone number is (703) 308-3581. The examiner can normally be reached on Monday-Thursday 6:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Simmons can be reached on (703) 308-1972. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7718 for regular communications and (703) 305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Scott Bushey
Primary Examiner
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4-24-01

csb
April 24, 2001